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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/779,373

02/17/2004

Marc Schaepekens

133348-1

7897

39290 7590 12/10/2008

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EXAMINER

KRUER, KEVIN R

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/779,373	Applicant(s) SCHAEPKENS ET AL.	
	Examiner KEVIN R. KRUER	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-8 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/24/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 6-8, 11, 13, and 14 are rejected under 35 USC 103(a) as being unpatentable over Chung et al (US 6,836,070) in view of Otto et al (US 5,643,638).

Chung teaches an electro-luminescent display with a substrate comprising an anode, and a cathode, and a barrier layer protective layer. A transparent sealing structure is glued to the top of the substrate wherein the transparent sealing structure has an adhesive layer glued to the protection layer, a plurality of organic resin layers formed on the adhesion layer, a plurality of inorganic barrier layers disposed between the organic resin layers, a flexible polymer film formed on the organic resin layer, and a hard coat formed on the flexible polymer layer (abstract). Herein the flexible polymer layer and the substrate are understood to read on the claimed "first" and "second" polymeric substrate layers. The organic layers are herein understood to read on the claimed organic polymer materials. The inorganic barrier layers are herein understood to read on the claimed inorganic material and may comprise metal oxides or nitrides (col 3, lines 39+).

Chung does not teach that the composition of the organic and inorganic layers should vary substantially continuously across the thickness of the composite. However, Otto teaches a method of producing a gradient layer (abstract) comprising organic and metal materials (col 4, lines 22+). Said coatings allows the user to vary the characteristics of the coating, better adherence and hardness (col 1, lines 18+) and which can be produced quickly (col 2, lines 33+). Thus, it would have been obvious to the skilled artisan at the time the invention was made to utilize the method taught in Otto to make the alternating organic/barrier layers taught in Chung. The motivation for doing so would have been to improve adhesion, reducing processing times, and allow for better control over the film's characteristics.

3. Claims 1, 4-8, and 11-14 are rejected under 35 USC 103(a) as being unpatentable over Graff et al (US 6,492,026) in view of Otto et al (US 5,643,638).

Graff teaches a high temperature substrate comprising at least one barrier stack adjacent to the polymer substrate (abstract). The substrate may be coated with additional layers such as scratch resistant layers (col 2, lines 64+) or electrically conductive layers (col 5, lines 1+). There is optionally a second substrate applied to the barrier stack on the side opposite the first substrate layer (col 4, lines 57+). The barrier stack comprises barrier layers and polymer layers (col 3, lines 57+). The barrier layers may comprise metal oxides, oxynitrides, nitrides, and the like (col 6, lines 1+). Said alternating layers of polymers and barrier layers are herein understood to read on the "diffusion inhibiting barriers." The polymer layers are acrylate polymers (claim 10). Said

barrier may be utilized with LEDS, LEPs, ED, LCDs and the like (col 2, lines 3+). When utilized, said devices are disposed between a pair of electrodes.

Graff does not teach that the composition of the organic and inorganic layers should vary substantially continuously across the thickness of the composite. However, Otto teaches a method of producing a gradient layer (abstract) comprising organic and metal materials (col 4, lines 22+). Said coatings allows the user to vary the characteristics of the coating, better adherence and hardness (col 1, lines 18+) and which can be produced quickly (col 2, lines 33+). Thus, it would have been obvious to the skilled artisan at the time the invention was made to utilize the method taught in Otto to make the alternating organic/barrier layers taught in Graff. The motivation for doing so would have been to improve adhesion, reducing processing times, and allow for better control over the film's characteristics.

4. Claims 1, 4-5, 7, 8, and 11-15 are rejected under 35 USC 103(a) as being unpatentable over Silvernail (US 6,576,351) in view of Otto et al (US 5,643,638).

Silvernail teaches an organic photoelectronic device structure and a method of making the same. The structure comprises a first barrier resin comprising a first composite stack and a second composite layer stack attached to the first composite layer stack (abstract). The composite layer stack comprises a first polymer substrate layer, at least one first planarizing layer and at least one first high-density layer, while the second composite layer stack similarly comprises a second polymer substrate layer, at least one second planarizing layer and at least one second high-density layer (abstract). Preferably, the stacks will comprise two or more planarizing layers and two

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or more high density layers (col 2, lines 41+). The planarizing layers comprise fluorinated polymers, polyacrylates, and the like. The high density layers comprise metal oxides, nitrides, carbides, and oxynitrides. Said multi-layer barrier stacks are herein understood to read on the “diffusion inhibiting barriers.” The substrate layers comprise polyolefin, polyimide, polyethersulphone, and polyester (col 2, lines 53+). The substrates are arranged such that the stacks are between said substrates (col 2, lines 26+).

Silvernail does not teach that the composition of the organic and inorganic layers should vary substantially continuously across the thickness of the composite. However, Otto teaches a method of producing a gradient layer (abstract) comprising organic and metal materials (col 4, lines 22+). Said coatings allows the user to vary the characteristics of the coating, better adherence and hardness (col 1, lines 18+) and which can be produced quickly (col 2, lines 33+). Thus, it would have been obvious to the skilled artisan at the time the invention was made to utilize the method taught in Otto to make the alternating organic/barrier layers taught in Silvernail. The motivation for doing so would have been to improve adhesion, reducing processing times, and allow for better control over the film’s characteristics.

Response to Arguments

Applicant's arguments filed 8/25/08 have been fully considered but are not persuasive.

The claims recite the limitation "diffusion inhibiting barrier comprising a material, the composition of which varies substantially continuously across a thickness thereof." Applicant argues Otto fails to teach said limitation. Specifically, applicant argues Otto specifically teaches away from continuous PECVD method. Said argument is not persuasive because the pending claims do not recite a specific method of deposition. Furthermore, applicant has failed to demonstrate the method recited in Otto is inherently incapable of producing the claimed film wherein the composition of the diffusion inhibiting barrier varies substantially continuously across a thickness thereof. Otto is understood to teach the claimed film because Otto teaches the film may be a layer wherein the composition of the layer changes continuously so that it changes from completely organic to completely inorganic (col 5, lines 11+).

Applicant further argues Otto teaches depositing single layers of differing composition to obtain a gradient, rather than depositing one layer that varies continuously. The examiner respectfully disagrees. Otto teaches the composition is adjusted "virtually without any delay (col 5, lines 43+)." Thus, the method is understood to produce the claimed composition which varies "substantially continuously" across the thickness of the barrier.

Applicant further argues the graded layer of Otto is not a diffusion inhibiting barrier layer. The examiner agrees but notes that Otto was never relied upon for said teaching. Chung, Graf, and Silvernail each individually teaches the use of barrier stacks comprising alternating polymeric and inorganic layers. Otto was relied upon to teach a method of producing a layer comprising continuously changing compositions that

alternate from fully organic to fully inorganic. It would have been obvious to utilize such a film in place of a stack of layers each comprising distinct organic or inorganic compositions. The motivation for doing so would have been that the approach of Otto reduces boundary issues between the inorganic and organic layers.

For the reasons stated above, the rejections are maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN R. KRUEER whose telephone number is (571)272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kevin R Kruer/
Primary Examiner, Art Unit 1794

<div>Application Number</div> <div></div>	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/779,373	SCHAEPKENS ET AL.	
	Examiner	Art Unit	
	KEVIN R. KRUER	1794	